

Site Safety Plan

A. SITE DESCRIPTION

Date 3/27/05 3:00 PM

Location ISOM Unit, BP Texs City

Hazards

Benzene; VOC; H2S; SO2; Fire; Slippery surfaces; compromised structure, platforms, piping; asbestos-regulated area in Zone 1 (i.e., ISOM ISBL and north/south OSBL pipe rack west of ISOM); biohazards (bloodborne pathogens and biosolids) in Zone 2 (e.g., west of the ISOM unit and north/south OSBL piperack and east of the Catalyst Warehouse); trapped hydrocarbon that could be release if disturbed and present potential fire hazards;

Note: There are X-ray crew radioactive sources in two contractor trucks in the controlled access area and one in an ULC tower. All sources have been retracted.

Area affected ISOM

Surrounding population West Plant

Topography NA

Weather conditions Forecast for today High of 65 F, partly cloudy, winds out of WNW at 25-35 mph and 20% chance of rain, tonight low of 53, clear skies, winds NW 10-20 mph, no chance of rain
Additional information

B. **ENTRY OBJECTIVES** - Continue site assessment and securing scene for investigation.

C. **ONSITE ORGANIZATION AND COORDINATION** - The following personnel are designated to carry out the stated job functions on site. (Note: One person may carry out more than one job function.)

IMT Operations Section Safety Officer Joe Hockless/Robert Mason

FEDERAL AGENCY REPS

☒ EPA Karen McCormick

☒ OSHA Kimi Scarpa, Chi Bui

☒ US Chemical Safety Board Angela Blair, Cheryl Mackenzie, Giby Joseph, Johnny Banks, John Bersland

☐ U.S. Coast Guard

☐ National Response Center (NRC) notification by phone

☐ Other

☐ Other

STATE AGENCY REPS

☒ TCEQ Walter Rodriguez

☐ General Land Office

☒ State Emergency Response Center (SERC) notification by phone

LOCAL AGENCY REPS

☒ TC Emergency Management Bruce Claussen

☐ TC Mayor

CONTRACTOR(S)

☐ Industrial Mutual Aid System (IMAS)

☐ Marathon

☐ Dow

☐ ISP

☐ Channel Industrial Mutual Aid (CIMA)

- ☒ Other Garner Environmental, Curtis Galloway/Chad Smith/Ken Beach
- ☒ Other A&B Lab, Gilbert Lopez
- ☒ Other Chad Hall, Weston Solutions for EPA
- ☐ Other

All personnel arriving or departing the site should log in and out. All activities on site must be cleared through the IMT Operations Section.

D. ONSITE CONTROL ISSC

ISSC has been designated to coordinate access control and security on site. A safe perimeter has been established at all streets around the ISOM and NDU. No unauthorized person should be within this area.

Control boundaries remain in effect and designated as follows: (see site map and legend)

- Security established **Controlled Access Points** for all roads around the ISOM and NDU to restrict access to the scene.
- A **Restricted Area** has been established and has been barricaded with an orange fence marked by an orange fence barricaded restricted access to scene.
- **Zone 1** the ISOM Unit ISBL and north/south OSBL pipe rack west of ISOM. An asbestos-regulated area has been established around Zone 1 and will be marked on the site map. Note the zone boundary is inside the orange fence barricade that defines the Restricted Area.
- **Zone 2** is west of the ISOM unit and north/south OSBL piperack and east of the Catalyst Warehouse.

The Tactical Command Post has been demobilized. Field operations will be coordinated the IMT Operations Section.

E. HAZARD EVALUATION

The following substance(s) are known or suspected to be on site. The primary hazards of each are identified.

Substances Involved (chemical name)	Concentrations (if known)	Primary Hazards (e.g., toxic, inhalation, skin)
Benzene	0.5% in feed, potential for exposure above 1 ppm	toxic, inhalation, carcinogenic
VOC	possibly above 300 ppm	irritant, inhalation
H2S	possibly above 1 ppm	toxic, inhalation
SO2	possibly above 1 ppm	toxic, inhalation
Asbestos	wetted, not a concern clean-up, potential for exposure above PEL, in Zone 1 (i.e., ISOM ISBL and north/south OSBL pipe rack west of ISOM); Zone 2 is clear	toxic, carcinogenic, inhalation

The following additional hazards are expected on site:

Benzene; VOC; H2S; SO2; Fire; Slippery surfaces; compromised structure, platforms, piping; asbestos-regulated area in Zone 1 (i.e., ISOM ISBL and north/south OSBL pipe rack west of ISOM); biohazards (bloodborne pathogens and biosolids) in Zone 2 (e.g., west of the ISOM unit and north/south OSBL piperack and east of the Catalyst Warehouse); trapped hydrocarbon that could be release if disturbed and present potential fire hazards;

Note: There are X-ray crew radioactive sources in two contractor trucks in the controlled access area and one in an ULC tower. All sources have been retracted.

F. PERSONAL PROTECTIVE EQUIPMENT

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks: (see site map and legend)

Location	Job Function	Level of Protection
Zone 1 (i.e., ISOM ISBL and north/south OSBL pipe rack west of ISOM)	Response Team/ Stabilization Team	<input type="checkbox"/> A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input checked="" type="checkbox"/> Other
Zone 2	Response Team/ Stabilization Team	<input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> C <input type="checkbox"/> D <input checked="" type="checkbox"/> Other
Restricted Area	Response Team/ Stabilization Team	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> D <input type="checkbox"/> Other
		<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> Other

Level A Fully-encapsulating suit, SCBA, disposable coveralls

Level B Disposable Tyvek coveralls, half-mask air-purifying respirator w/ organic vapor/acid gas/HEPA filters, rubber boots, rubber gloves, FRC, safety glasses, hardhat. Tyvek will be taped to gloves and boots.

Level C FRC, rubber boots, rubber gloves, safety glasses, hardhat

Level D FRC, safety boots, safety glasses, hardhat

Other

Note: Stabilization work crews may wear leather gloves in Zone 2 during installation of temporary pumps at Lift Station

Note: Garner to handle biohazard remediation.

The following protective clothing materials are required for the involved substances:

Substances Involved (chemical name)	Type of chemical protective material (e.g., Viton)
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na

Air purifying respirators with organic vapor/HEPA filters are required for any activity in the restricted area. A competent individual has determined that all criteria for using this type of respiratory protection have been met. Any changes based on air monitoring and site assessment need to be approved by the IMT Safety officer and on the on scene incident commander.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER AND THE ON SCENE COMMANDER.

G. ONSITE WORK PLANS

Work party(s) consisting of 50+ persons will perform the following tasks:

Function	Task
On-Scene Commander	
Work Party #1	OSHA Investigation
Work Party #2	USCSB Investigation
Work Party #3	BP Incident Investigation
Rescue Team	
Rescue Team for IDLH entries (contractor)	
Decontamination Team	

Rehab Team (Rest Firefighters on standby)

Other Command Section

Other Operations Section

Other EAP

Other HR

Other Legal

Other Logistics

Other Planning

Other P&GA

coordinate IMT and unified command
provide support to and communicate with Tactical Team

counseling for personnel
support to injured & their families; support to families of those missing and fatally injured
claims administration;
provide procurement and logistics support
provide planning support to IMT and Tactical Team

coordinate communications with Media & government

The work party(s) were briefed on the contents of this plan at shift change and periodically throughout the shift.

H. COMMUNICATION PROCEDURES

Radio Channel Fire 1 and Fire 3 has been designated at the radio frequency for personnel in the Zone 1 & 2. All other onsite communications will use normal channels.

Personnel in the Zone 1 & 2 should remain in constant radio communication or within sight of the On Scene Commander. Any failure of radio communication requires an evaluation of whether personnel should leave the Restricted Area.

Radio Channel Fire 1 is the emergency signal to indicate that all personnel should leave the Restricted Area. In addition, a loud hailer is available if required.

The following standard hand signals will be used in case of failure of radio communications:

Hand gripping throat	Out of air, can't breathe
Grip partner's wrist or	Leave area immediately
both hands around wrist	
Hands on top of head	Need assistance
Thumbs up	OK, I am all right, I understand
Thumbs down	No, negative

I. DECONTAMINATION PROCEDURES

Personnel and equipment leaving the Zone 1 & 2 shall be thoroughly decontaminated if required. The standard level A & B decontamination protocol shall be used with the following decontamination stations:

- Zone 1 - Roll off Tyvek, remove, and bag tyvek, wash boots and gloves with soap and water, clean respirators
- Zone 2 - wash boots and gloves with soap and water
-

Emergency decontamination will include the following stations:

Current stations: Miken Decon trailer set up on the south side of the warehouse.

Note: Garner to handle biohazard remediation.

The following decontamination equipment is required: Miken Decon trailer

Soap and water will be used as the decontamination solution.

J. SITE SAFETY AND HEALTH PLAN

1. Joe Hockless/Robert Mason is the designated Site Safety Officer and is directly responsible to the On Scene Commander for safety recommendations on site.
2. All available site EMT including BP and contractors are the qualified EMTs on site., available on scene by Radio Channel Fire 1 and Fire 3 . Have been briefed on the situation, the potential hazards, and the substances involved.

Local ambulance service is available on scene at Radio Channel Fire 1 . Whenever possible, arrangements should be made for onsite standby.

First aid equipment is available on site at the following locations:

First aid equipment	Ambulance, Medical Dept, Gate 42 First Aid Trailer
Emergency eye wash	available on unit; decon trailer available
Emergency shower	available on unit; decon trailer available
Other	

Emergency medical information for substances present:

Substance (chemical name)	Exposure Symptoms	First Aid Instructions
Fuel gas	See MSDS	See MSDS
Natural gas	See MSDS	See MSDS
Benzene	See MSDS	See MSDS
Butane	See MSDS	See MSDS
Hydrogen sulfide (H ₂ S)	See MSDS	See MSDS
Light raffinate	See MSDS	See MSDS
Pentane	See MSDS	See MSDS
Spent Caustic	See MSDS	See MSDS
MEA	See MSDS	See MSDS
Turbinol Select ISO 46	See MSDS	See MSDS
Hexane	See MSDS	See MSDS
C1-C4 Hydrocarbons	See MSDS	See MSDS
C5+C6 Isomerization	See MSDS	See MSDS
Naphtha		
Light Virgin Naphtha	See MSDS	See MSDS
Hydrotreated Naphtha	See MSDS	See MSDS
Nalco 73134	See MSDS	See MSDS
Nalco 73181	See MSDS	See MSDS
Nalco 73272	See MSDS	See MSDS
Sodium Hypochlorite 7-15%	See MSDS	See MSDS
Asbestos	See HSE Policy PR-11	See HSE Policy PR-11

List of emergency phone numbers:

Agency/Facility	Phone #	Contact
Police	911	
Fire	911	
Hospital	911	
Airport	na	

Public Health Advisor
Other
Other
Other
Other

3. Environmental Monitoring

The following environmental monitoring instruments shall be used on site (cross out if not applicable) at the specified intervals.

Substance (chemical name)	Instrument	Purpose
Benzene	UltraRae	Internal monitoring around ISOM
VOC	UltraRae	Internal monitoring around ISOM
Asbestos	25 mm MCE filters w/ 50 mm cowl & personal sampling pump	Zone 1, Zone 2, and ULC area for negative exposure assessment (initial monitoring results are negative)
	Bulk sampling	Zone 2 (results negative)
	Liquid sampling	Monitor for asbestos in effluent
Radioactive sources	Gieger Counter	Survey area to determine radiation levels. No hazardous levels found.

4. Emergency Procedures (should be modified as required for incident)

The following standard emergency procedures will be used by onsite personnel. The Site Safety Officer shall be notified on any onsite emergencies and be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury in the Exclusion Zone: Upon notification of an injury in the Exclusion Zone, the designated emergency signal on Radio Channel Fire 1 shall be sounded. All site personnel shall assemble at the decontaminated line. The rescue team will enter the Exclusion Zone (if required) to remove the injured person to the hotline. The Site Safety Officer and On Scene Commander should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone. The onsite EMT shall initiate the appropriate first aid, and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall reenter the Exclusion Zone until the cause of the injury or symptoms is determined.

Personnel Injury in the Support Zone: Upon notification of an injury in the Support Zone, the On Scene Commander and Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the onsite EMT initiating the appropriate first aid and necessary follow up as stated above. If the injury increases the risk to others, the designated emergency signal Radio Channel Fire 1 shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on site will stop until the added risk is removed or minimized.

Fire/Explosion: Upon notification of a fire or explosion on site, the designated emergency signal on Radio Channel Fire 1 shall be sounded and all site personnel assembled at the decontamination line. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

Personal Protective Equipment Failure: If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure: If any other equipment on site fails to operate properly, the On Scene Commander and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

The following emergency escape routes are designated for use in those situations where egress from the Exclusion Zone cannot occur through the decontamination line:(describe alternate routes to leave area in emergencies)

In all situations, when an onsite emergency results in evacuation of the Exclusion Zone, personnel shall not reenter until:

1. The conditions resulting in the emergency have been corrected
2. The hazards have been reassessed.
3. The Site Safety Plan has been reviewed.
4. Site personnel have been briefed on any changes in the Site Safety Plan.

5. Personal Monitoring

The following personal monitoring will be in effect on site:

Personal exposure sampling: Personnel going into the Zone 1 and 2 will wear an organic vapor monitoring badge.

Medical monitoring: The expected air temperature will be high of 75 F. If it is determined that heat stress monitoring is required (mandatory if over 70°F) the following procedures shall be followed: personnel will take appropriate rest breaks and drink water. If exposures to benzene is high, biological samples (urine) will be collected at the end of the work shift.

6. Precautions for Biohazards

Emergency medical and rescue activities with potential exposure to bloodborne pathogens will only be handled by designated personnel who have been trained on the applicable procedures. See EMRT Policy EMT-3, Infection Control Plan.

Precautions for biosolids in recovery zone include rubber boots and rubber gloves.

All site personnel have read the above plan and are familiar with its provisions.

Job Title	Name	Signature
IMT Safety Officer	Joe Barnes/Eddison Arnold	
IMT Operations Section Chief	Joe Hockless/Robert Mason	

Prepared by: Mary K. Alberts, IMT Planning Section, Health & Safety Unit
Date: 3/27/05

Legend for Site Safety Plan

Organic Vapor Monitor (OVM) Badge Station (Garner Environmental truck) **(A)**

- OVM badges required for entry to Zone 1 & 2 only and benzene-regulated area.

Controlled Access Points (ISSC Security Trucks) **(B, C, D)**

Miken Decon Trailer **(E)**

Zone 1

Zone 1 is currently designated as an asbestos-regulated area. The following PPE is required for entry:

- half-mask air-purifying respirator with organic vapor/acid gas/ cartridges and HEPA filter,
- disposable Tyvek coveralls, taped to gloves and boots
- FRC
- steeled-toed rubber boots or equivalent
- rubber gloves
- safety glasses
- hardhat

Zone 2

The following PPE is required for entry:

- FRC
- steeled-toed rubber boots or equivalent
- rubber gloves
- safety glasses
- hardhat

Restricted Area (marked by orange fenced barricade)

All areas within Restricted Area except Zone 1 and 2 require:

- FRC
- safety shoes
- safety glasses
- hardhat

Tank 108 Benzene-regulated Area

The following PPE is required for entry:

- half-mask air-purifying respirator with organic vapor/acid gas/ cartridges and HEPA filter,
- FRC
- safety shoes
- safety glasses
- hardhat